

**What is Claimed:**

1. A system providing optimization over manufacturing resources of a discrete manufacturing environment, comprising:
  - a data store, the data store having optimization rules and heuristics for the discrete manufacturing environment; and
  - a workflow optimization engine, the workflow optimization engine cooperating with the data store to obtain manufacturing rules and/or heuristics for processing to generate workflow optimization data.
2. The system as recited in claim 1, further comprising a communications network, the communications network cooperating with the workflow optimization engine to communicate optimization data between the workflow optimization engine and cooperating manufacturing resources.
3. The system as recited in claim 2, wherein the communications network comprises any of: local area network, wide area network, extranet, intranet, peer-to-peer networks, and the Internet.
4. The system as recited in claim 3, wherein the communications network is wireless and/or fixed wire.
5. The system as recited in claim 1, wherein the workflow optimization engine comprises a computing application having one or more instruction sets to instruct a computing environment to process data representative of discrete manufacturing information.
6. The system as recited in claim 5, wherein the manufacturing information comprises any of: manufacturing resource capacity information, time for manufacturing information, manufacturing resource specifications, raw material information, and manufacturing environment information.

7. The system as recited in claim 1, wherein the workflow optimization engine cooperates with a plurality of manufacturing resources to obtain and process manufacturing information used in one or more manufacturing processes.
8. The system as recited in claim 7, wherein the workflow optimization engine receives data from additional manufacturing optimization data resources comprising any of manual data, manufacturing control information, and planning information to generate at least one workflow optimization routine for use on cooperating manufacturing resources.
9. The system as recited in claim 8, wherein the workflow optimization engine utilizes an agent that executes one or more of artificial intelligence techniques to obtain the additional optimization data.
10. The system as recited in claim 1, wherein the workflow optimization engine communicates with manufacturing resources in a real time manner obtaining manufacturing resource information comprising any of: operational status, change in capacity, production efficiency, and loading information.
11. The system as recited in claim 8, wherein the additional manufacturing optimization data is provided to the workflow optimization engine over a communications infrastructure.
12. A method for generating workflow optimization processes and techniques for use on manufacturing resources of a manufacturing environment comprising the steps of:
  - receiving request for the manufacture of a product or product component; and
  - processing the request by a workflow optimization engine, the workflow optimization engine having at least one instruction set to process data according to predefined manufacturing rules.
13. The method as recited in claim 12, wherein the further comprising communicating the processed data to at least one cooperating manufacturing resource.

14. The method as recited in claim 13, wherein the communicating step comprises establishing communications over a communications network with the manufacturing resource.
15. The method as recited in claim 14, further comprising retrieving from a cooperating data store data manufacturing rules and heuristics for the manufacturing environment.
16. The method as recited in claim 15, further comprising receiving data from cooperating additional manufacturing optimization resources comprising any of manual data, manufacturing control application, and planning systems for processing and to generate the manufacturing instructions.
17. A computer readable medium having computer readable instructions to instruct a computer to perform the method as recited in claim 12.
18. A method to generate workflow optimization instructions for manufacturing resources comprising:  
providing a workflow optimization engine, the workflow optimization engine capable of receiving and processing data to generate workflow optimization instructions.
19. The method as recited in claim 18 further comprising, providing a data store, the data store cooperating with the workflow optimization engine providing manufacturing rules and manufacturing environment conditions.
20. The method as recited inc claim 18 further comprising, providing a communications network, the communication network cooperating with the workflow optimization engine to communicate workflow optimization instructions to cooperating manufacturing resources.

21. In an information technology system providing communication of data among a global power distribution equipment manufacturer enterprise, a module providing workflow optimization comprising:

a communications network, the communication network capable of receiving and transmitting data representative of power distribution equipment manufacturing processes;

a data store, the data store having data representative of power distribution equipment manufacturing processes;

a manufacturing control applet, the manufacture control applet cooperating with the communications network and the data store to receive data representative of power distribution manufacturing data, comprising any of power distribution system market information, design information, facilities capacity, planning, and materials information, for processing, such processing comprising any of generating manufacturing control instructions to control at least one cooperating manufacturing resource, wherein the applet communicates with the manufacturing resource to obtain manufacturing resource operational and status information, and wherein the manufacturing control applet uses the operational information to generate workflow optimization instructions for communication to and execution by cooperating manufacturing resources.

22. The system as recited in claim 21, wherein the data store has data representative of manufacturing resources and enterprise data comprising any of planning information, project information, and manufacturing control information.